UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 CHESTNUT BUILDING
PHILADELPHIA, PENNSYLVANIA 19108

May 8, 1991

Mr. John Hammond, P.E.
Roy F. Weston, Inc.
Weston Way
West Chester, PA 19380

Re: Tybouts Corner Landfill, DE
Ward Clay

Dear Mr. Hammond:

This is a follow-up to our discussions concerning the appropriateness of a "mini" test fill to further evaluate the suitability of the Ward Clay at Tybouts Corner. EPA continues to believe that the information derived from a "mini" test fill constructed prior to the development of design documents will be of significant benefit. As discussed in EPA's letter of March 13, 1991, resolution of issues bearing on the construction phase in advance of such work will potentially yield better technical specifications related to excavation, placement, protection of finished work, and quality control and may additionally result in more realistic pricing and fewer construction disputes. Issues arising during the construction phase which could have been resolved during design may potentially introduce delays resulting in the assessment of stipulated and/or statutory penalties and could prejudice the defendants' ability to obtain reimbursement of costs incurred in taking corrective actions.

Further, as stated in EPA's guidance document: Design, Construction, and Evaluation of Clay for Waste Management Facilities (Nov. 1988), "[t]here are a number of differences between laboratory and field conditions (uniformity of material, control of water content, compactive effort, compaction equipment, etc.) that make it unlikely that permeabilities measured on laboratory-compacted samples can be achieved during construction." Even though design tolerances are usually taken into account in the design specifications (e.g., specifying an order of magnitude lower permeability than required), EPA's guidance document goes on to state that field permeability and laboratory permeability measurements on undisturbed samples of compacted liner material can vary by as much as 3 orders of magnitude.

Finally, information derived from a "mini" test fill would be useful and, in fact, necessary to any decision by EPA relating to the secondary layer (Typar layer) of the landfill cap. Obviously, EPA's decision on such secondary layer would be based in large part on the performance characteristics of the materials proposed for use in the first layer of the cap. A "mini" test fill on the Ward Clay would likely provide an early indication as to whether the specified density, moisture content and permeability relationships determined in the laboratory can be achieved in the field and would, as a result, better enable the Agency to make an informed decision regarding the secondary layer.

For the above reasons, EPA recommends that defendants construct a "mini" test fill at this time. Do not hesitate to contact me with further questions concerning this matter.

Sincerely,

Paula L. Retzler
Remedial Project Manager
DE/MD Section

cc: Chen-yu Yen / Gannett Fleming
Dilip Hansalia / DNREC

bcc: Laura Janson
Peter Ludzia
Andy Goldman